



Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

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December 30, 2008

Mr. Curtis R. Michols
Abbott Laboratories
Dept. 0539, Bldg. AP52-S
200 Abbott Park Road
Abbott Park, IL 60064-6212

RCAP RECEIVED

JAN 13 2009

**RE: Draft Post-Closure Plan
Abbott Former Wastewater Lagoon, Wichita, Kansas
EPA ID No. KSD981495567**

Dear Mr. Michols:

The Kansas Department of Health and Environment (KDHE), Bureau of Waste Management (BWM) received the Draft Post-Closure Plan (DPCP) on November 25, 2008. Upon review of this document, KDHE has the following comments:

1. On page three of the letter, number seven indicates that the annual report for each year will be due on March 3 when in fact the due date is March 1 of each year. This was a typo in KDHE's June 23, 2008 letter. There is also a reference to the March 3 date on page 10 of the DPCP. Please change the date accordingly within the text of the DPCP.
2. KDHE requests that the first sampling event of the leachate after the approval of the Post-Closure Plan be a one-time Appendix IX sampling. After reviewing the summary table and graph in Appendix 5 of the DPCP, KDHE feels that a broad-spectrum analysis of the leachate is warranted.
3. Last paragraph on page seven of DPCP describes how "benzene has not been detected above its MCL in 12 quarterly rounds of monitoring since Q3 1992." While this statement is true, it is also misleading. While there have been 12 sampling events since Q3 1992, at some of these sampling events, there was only one well sampled. For example, the four quarterly sampling events between Q3 1996 and Q2 1997, the only well that was sampled for benzene was MW 102D. In the 12 quarterly rounds described, there was not one event where the MW 4, 8, 16, and 102 clusters (lagoon wells) were all sampled. Please revise the text to reflect the sporadic sampling of the lagoon wells.
4. According to the Appendix IX sampling event conducted by OxyChem earlier this year, arsenic and n-nitrosodi-N-butylamine were detected in Abbott wells. These compounds need to be added to the list of contaminant of concern (COC).

DIVISION OF ENVIRONMENT
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5. In the second sentence in the first paragraph on page 10, the acronym "KDHE" is misspelled. Please revise.
6. In the third paragraph on page 10, the word "groundwater" is misspelled. Please revise.
7. In section 6.2 of the DPCP, Abbott describes a Final Closure Report that will be submitted after a three-year monitoring period. Abbott would like KDHE to concur on "no further action" at the lagoon after certain conditions are met. While KDHE will review the report described, KDHE will not guarantee concurrence at this time. Please reword the section to say that Abbott will submit the report and request no further action at the site. In addition, KDHE would like to add the criteria that the leachate must also meet the same clean-up criteria as the groundwater before KDHE will approve "no further action" at the Abbott facility.
8. KDHE will not accept four rounds of sampling data as the basis for the decision to determine that no further action is acceptable at this site. At a minimum, KDHE will need three years of consecutive groundwater and leachate collection data before we will consider any reduction in monitoring. If at any time during this three-year period there is a detection above the Tier 2 RSK values, there is no basis for reduction in monitoring and submittal of the Final Closure Report will be premature.
9. Tables 1 and 2 of the DPCP have "INSERT LAB CONT" where two compounds should be listed. Please revise the table to include the names of these compounds.
10. Appendix 5 contains a sump monitoring summary table. KDHE would like to know if this is a complete list of all constituents sampled for during the 2004-2006 sampling period. In addition, KDHE would also like to see the lab reports with this data to verify detections.
11. On page 2-2 of the Sampling and Analysis Plan (SAP), the first sentence of the paragraph is a repeat of the sentence before it. Please revise the text.
12. Section 3.2 of the SAP includes a list of COCs. Even though there are other COCs on the Abbott property that are not attributable to Abbott, they still need to be included on the list of COCs. As Abbott will be reporting the detections of these COCs to KDHE, KDHE would still like a complete list of COCs in the groundwater at Abbott.
13. The first paragraph of page 4-1 of the SAP includes well depths for some of the lagoon wells. As these wells are clusters, please revise the text to include the depths of all the wells in the cluster.
14. In section 4.1 of the SAP, there is a table that describes the Method Detection Limit (MDL) for several of the COCs at Abbott. Most of the MDLs listed for these compounds are 0.25 mg/L. KDHE is under the assumption that these are not the laboratory MDLs, but rather the reporting limit imposed by Abbott for this facility. As this is not a true laboratory MDL, please reword the table to reflect this as Abbott's reporting limit or put in the true MDL from the lab.
15. In section 4.3 of the SAP, it is indicated that the total depth of the well will be measured to the nearest 0.05 foot. Well depth measurements should be measured to the nearest 0.01

foot. Please revise the text accordingly. Also, it should be noted somewhere in the text that static water levels and total depth measurements should always be taken from the reference mark which is on the north side of the casing to ensure consistency with measurements.


16. Paragraph one of Section 4.4 indicates that a peristaltic pump or a variable speed pump would be used for the purging of groundwater. The Puls and Barcelona paper referenced in the SAP states that “ (t)he peristaltic pump... can cause degassing resulting in alteration of pH, alkalinity, and some volatiles loss.” While KDHE will not force Abbott to use one type of pump over the other, it is generally accepted that bladder pumps are the best pumps for low-flow sampling and are therefore recommended for use as dedicated pumps.
17. In section 4.4, stabilization parameters are listed for well purging. While Dissolved Oxygen (DO) is listed on the example field data sheet in the DPCP, it is not listed in section 4.4. Please revise the text accordingly.
18. In the section on well purging (section 4.4) there is no discussion on monitoring drawdown in the well. As this is an important requirement to validate the low-flow purging technique, please include a discussion on how the field crew will monitor drawdown in the field. Drawdown should be observed and recorded in each well based on a stabilized pumping water level, while also attempting avoid drawdown within the screened interval.
19. Section 4.6 discusses the collection of quality control samples. The last sentence indicated there will be one VOC trip blank per monitoring event. The text should be revised to state there will be one trip blank per cooler sent to the lab.
20. In section 4.7.2, Abbott describes what will be included in the field records for each sampling event. KDHE would like to add “shipper name” to the list of items to be recorded, as it is often left off the chain-of-custody sheets.
21. Table 1 of the SAP needs to be revised to add a column for total depth measurements in addition to the installed depth. A column will also have to be added for “percent occlusion” so the field crew will know whether a well should be re-developed.
22. KDHE would like an additional facility-wide map to be included with the SAP. On it, KDHE would like to see the entire Abbott property to show the relationship of the lagoon to the rest of the property.
23. According the SAP checklist that was submitted to Abbott in KDHE’s June 23, 2008 letter, there are many missing elements to the SAP. They are as follows:
 - A. A discussion on the existing aquifers in the area, including the approximate depths and further discussion on which aquifers will be monitored.
 - B. Property lines on Figure 2.
 - C. On-site utilities for all maps.

- D. A table of monitoring well information, which includes:
 - i. Well identification
 - ii. Top of casing identification
 - iii. Depth to water
 - iv. Installed Depth
 - v. Position (upgradient or downgradient) relative to the area being monitored
 - vi. Casing diameter
 - vii. Screen interval
 - viii. Formation being monitored
- E. A copy of the surveyor's report for horizontal and vertical position of wells.
- F. A sampling schedule which describes how often groundwater samples will be collected. If possible, KDHE would also like the months in which the sampling will take place. This information is located within the text of the DPCP, but also needs to be included within the SAP.
- G. A line-by-line description of all field procedures including, but not limited to, pre-sampling procedures, well inspection information, water level measurements, total depth measurements, glove usage, and equipment calibration.
- H. A well inspection table which includes the condition of the following items:
 - i. well pad
 - ii. casing
 - iii. reference mark
 - iv. well identification
 - v. protective casing
- I. A line-by-line description on the sampling of the wells using the low-flow method.
- J. Identify within the SAP the order of purging and sampling.
- K. A line-by-line procedure on how to sample using a hand-bailing method in case of pump failure.
- L. A discussion on how pumps are installed in the well, in particular where the pump intake will be placed within the screened interval.
- M. A table listing what parameters will be analyzed in each well along with the analytical method.
- N. A description of the unique analytical method Continental is using to analyze the amines.
- O. An analyte specific sampling order, i.e. volatility of the contaminant.
- P. A line-by-line description on how wells will be re-developed. This will need to occur when more than 25% of the effective screen is blocked.

- Q. Laboratory Quality Assurance/Quality Control (QA/QC), which includes, the KDHE Certified Lab number, the reporting levels, holding times, analytical methods, quantitative detection limits, and measures for evaluating the laboratory's analysis of each chemical constituent.
- R. A line-by-line description on what will be included in the annual report, including, but not limited to, the schedule reports will be submitted, copies of laboratory analytical results with all QA/QC data and chain of custody forms included, a potentiometric surface map with direction of groundwater flow, copies of field notes and/or field data sheets, summary and table of water quality results, data validation summary, and deviation from the SAP and why.
24. This plan does not detail procedures for the removal of leachate from the sump, sampling of the leachate, and disposal of the leachate. The plan must also explain any procedures necessary to inspect or maintain the leachate collection system, including frequency of implementation. Please outline procedures to maintain the leachate collection system within the Operation and Maintenance (O&M) plan located in Appendix 7.
25. Please delete Section 7.0 of the DPCP, as it is not appropriate for inclusion in this plan. The purpose of the plan is to provide minimum information to carry out care for this former lagoon, not provide opinions or speculations.

Please submit a revised DPCP to KDHE by January 30, 2009. If you have any questions regarding this letter, please call me at (785) 296-6597.

Sincerely,



Christy McCormick
Environmental Scientist
Hazardous Waste Permits Section

cc: **David Garrett - EPA Region 7**
Lindell Sneed - Abbott
Bill Bider - BWM

Allison Herring - SCDO
Jack Thorsen - Matrix